A Special Delivery from SC PRAMS

What are the Predictors of Low Birthweight in South Carolina Mothers?

In the United States, almost eight out of 1000 babies, born alive, die before their first birthday (NCHS 1996). Because adequate birthweight is one of the best indicators of infant survival, reducing the occurrence of low birthweight is an important problem to be addressed. This leaflet explains the results of an analysis conducted to arrive at the strongest predictors of low birthweight. The data used to complete the analyses were collected from South Carolina PRAMS (SC's Pregnancy Risk Assessment Monitoring System) and the South Carolina Birth Registry.

Definitions (These definitions may help you understand the rest of this leaflet.)

1. **Low birthweight** (LBW) is less than 2500 grams (or 5 ½ pounds) at birth.

   Low birth weight has two subcategories: moderately low birth weight and very low birth weight.

   a) Moderately low birth weight (MLBW: 1500-2499 grams)

   b) Very low birth weight (VLBW: <1500 grams or 3 ½ pounds).

2. **Normal birth weight** (NBW) is 2500 grams or more at birth.

3. **Prenatal care:** Medical care that a woman receives during her pregnancy

4. **Gestational weight gain:** the amount of weight that a woman gains during her pregnancy

5. **Gravidity:** the number of previous pregnancies that a woman has had (including those that did not result in a live birth.)

6. **Prepregnancy Body Mass Index (BMI):** measure of a woman's weight for height before pregnancy.

   A woman may have a low (underweight), normal (average), or high (overweight) BMI.

What is SC PRAMS?

The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing mail/telephone survey that obtains information from new mothers shortly after they deliver. About 3000 mothers are randomly sampled from the state's live birth registry each year. Statistical weights are applied to adjust for selection probability, non-response, and non-coverage. After these weights are applied, state specific estimates of maternal and infant health can be generated. The data presented reflect live births to SC mothers occurring in SC between October 1992 and December 1995. The overall response rate was close to 70%. The analyses in this report includes information from 3,006 black mothers (reflecting 62,438 black mothers) and 3,552 white mothers (reflecting 96,030 white mothers). VLBW and MLBW infants were over-sampled to provide sufficient numbers for studies to be conducted on these high-risk groups.

How does South Carolina compare to the rest of the US?

⇒ In South Carolina, **3.0%** of black births and **1.2%** of white births were **VLBW** in 1995, for an overall rate of VLBW (1.9%) (SCDHEC 1997) **slightly higher** than the nation as a whole (1.35%) (Ventura et al. 1997).

⇒ In South Carolina, **10.5%** of black births and **5.6%** of white births were **MLBW** in 1995 (SCDHEC 1997) for an overall rate (7.5%) which is **substantially higher** than the nation as a whole (5.95%) (Ventura et al. 1997).

RESULTS

Because it was suspected that the causes for VLBW and MLBW differed by race, two separate analyses were conducted: one for black mothers and one for white mothers. The predictors of VLBW and MLBW were very similar for black and white women. Some differences are noted in the lists below.

Predictors of VLBW:

- **Inadequate prenatal care**
- **More than adequate prenatal care** (This means that the woman, perhaps because of problems with her pregnancy, visited the doctor more than most women. This does **NOT** mean that women should avoid getting too much prenatal care!)
- **Previous LBW infant**
- **3 or more previous pregnancies**
- **Teenagers (**significant predictor only for black women**) or women over 35 years (**significant predictor only for white women**)**
- **Inadequate gestational weight gain (**significant predictor only for white women**)**

Predictors of MLBW:

- **A previous infant was LBW**
- **Inadequate prenatal care**
- **More than adequate prenatal care** (Again, this indicates that women who visited the doctor more than other women were probably experiencing problems with their pregnancies.)
- **Smoking**
- **Inadequate gestational weight gain** (significant predictor only for white women)
- **Low prepregnancy BMI** (significant predictor only for white women)

Attention!!!

The **strongest predictors** of **VLBW** and **MLBW** in black **and** white mothers were…

***Inadequate prenatal care** or **more than adequate prenatal care**

***Previous delivery of a LBW infant**

WHAT DOES THIS MEAN?

Unfortunately, the demographic (for example: age) and biomedical (for example: gravidity) risk factors assessed in this analysis cannot be changed. Demographic and biomedical characteristics are very useful, however, because they help us identify high risk women. The good news is that **prenatal care, gestational weight gain,** and **smoking,** CAN be changed.

Prenatal Care:

- **Inadequate prenatal care** means that the woman did not receive the recommended amount of prenatal care. It is recommended by the American College of Obstetricians and Gynecologists that a woman receive one visit per month through 28 weeks, one visit every 2 weeks through 36 weeks, and one visit per week thereafter until the baby is born (ACOG 1985). In a 40-week pregnancy this amounts to 14 visits.

- Women with **inadequate prenatal care** and **more than adequate prenatal care** are at higher risk for VLBW and MLBW than those who received adequate prenatal care, in both races. (More than

adequate prenatal care may be an indication of a problem pregnancy.)

- Prevention of LBW (VLBW and MLBW) may be possible if women are encouraged to receive adequate prenatal care in all cases, and risk appropriate care for women at higher risk. Risk appropriate care means that if there are problems, the woman should see her doctor more often.

- In addition to receiving extra prenatal care, women at higher risk should be closely monitored during pregnancy. A plan should be made in anticipation of an early or problem delivery. For example, a plan to deliver at a hospital equipped with a neonatal intensive care unit.

Gestational Weight Gain:

- Inferences concerning gestational weight gain can be made for white women only; however, **all women** should be encouraged to gain the recommended amount of weight during pregnancy.

- In general, women should gain from **25-35** pounds during a full term pregnancy. Women with a low body mass index (BMI) should strive to gain slightly more (28-40 pounds), and women with a high BMI should try to gain slightly less (15-25 pounds).

Smoking:

- Smoking is a modifiable risk factor for MLBW in black and white women. All women should be educated about the dangers of smoking during pregnancy at prenatal care visits.

CONCLUSION

It is encouraging that three of the predictors for VLBW and MLBW were behavioral characteristics (gestational weight gain, smoking and prenatal care). This is good news, because **behaviors can be changed**. With the knowledge of these behavioral risk factors and the ability to identify high risk women (through demographic and biomedical factors identified earlier), it may be possible to reduce the high rate of LBW and ultimately reduce the high rate of infant mortality in South Carolina.

References

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